

ABSTRACT

A batch fabrication technique is described that increases the manufacturing efficiency of servo write heads and also improves servo pattern definition for fine features, while reducing tape and head wear. Multiple heads are fabricated as a batch from one or more ferrite wafers. A nominally flat, large wafer surface and a contour suitable for uniform photoresist application and planar photolithography permit fine servo pattern definition. A rounded leading edge on the head creates an air bearing to reduce wear of the tape and of the head. Moreover, any head wear occurs at the leading edge rather than in the region of the head where the servo pattern is formed. The servo write head may have a substantially planar head surface. A leading edge is disposed adjacent to the head surface such that the tape contacts the leading edge before passing over the head surface. The leading edge is rounded to form an air bearing between the head surface and the tape. A rounded trailing edge may be disposed adjacent to the head surface such that the tape passes over the trailing edge after passing over the head surface. The head may be formed from an upper ferrite wafer having a non-magnetic spacer. Non-magnetic material is photolithographically defined to produce gaps above the spacer. The non-magnetic material may be photoresist, semiconductor materials, glass, metal or the like. The material may even be removed later to leave air gaps. The non-magnetic material forms a region where the field loops out to intersect the passing tape, thereby transferring a magnetic pattern to tape. Additionally, a lower ferrite wafer may be mated to the upper ferrite wafer to complete a magnetic circuit around the gaps. The upper or lower ferrite wafer may have a channel through which an inductive winding passes. Multiple heads may be formed through batch processing of the upper and lower ferrite wafers.